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# **Cost Savings in Control Board Processing through Business Process Management**

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## **A Success Story**

NASA PM Challenge 2008  
Richard Laws



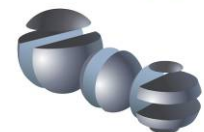


# Tietronix

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- **Established 1999 - SDB and 8(a) certified**
- **HQ - Houston, 80% business with NASA**
  - 50 employees with 75% software developers and engineers
  - PMPs in project and program management
- **Core Competencies**
  - Custom Software Development
  - **Engineering Process Automation**
  - Training, Education & Outreach
  - Graphics, Animation, Virtual Reality
  - Optical device for anti-glaring and anti-blooming
- **NASA Projects/Relationships**
  - Mission Operations
  - Space & Life Sciences
  - JSC Engineering
  - Simulation/Training

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# Overview

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- **CCB Process Automation Project**
  - BPSCM - Bioastronautics Planning System Configuration Module
  - To solve problems and challenges faced by SLSD
- **BPSCM Results:**
  - reduced manpower requirements,
  - improved compliance with approved processes
  - managed changes
  - increased communication and participation
  - Platform to easily modify & improve process



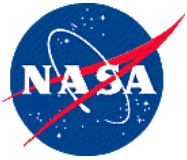


# Introduction

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- **The Problem - Automation of a Human Centric Process – CCB**
- **Resistance encountered**
- **Return on Investment – objective/subjective + tangible benefits**
- **The process of automating process**
- **Commercial Process activities**
- **Summary and Conclusions**





# Problem

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- **Space Life Sciences Directorate (SLSD) at NASA Johnson Space Center (JSC) faced a challenge**
  - Declining budgets
  - CCB activities - labor intensive
  - New Configuration Management (CM) standard





# Requirements

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- **Enforce the Configuration Management Plan**
  - Describes how configuration management is done in the directorate
- **Enforce the Control Board Requirements**
  - Describes how the control boards work.
  - Common requirements plus “uncommon”
- **Reduce the labor support requirements**





# Challenge

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- **Conflicting requirements**
  - Multiple boards – unique processes
    - *Some boards had additional steps before bringing a Change Request to the board*
  - Configuration management requirements loosely supported
    - *The Change Request was approved but we noticed a problem and we need to fix it*
  - Direction to do more with less
- **Incomplete requirements**
  - Electronic process functions differently than paper/manual process
  - Prototypes to drive out additional requirements
- **Reluctance to change**





# BPSCM Solution

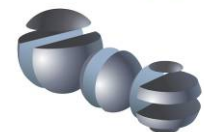
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- **Process Centric Approach**

- Graphically modeled a process based on
  - Existing SLSD processes
  - New CM requirements
  - Stakeholder interviews
- Used tool to 'code' the process
  - GFE tool – TieFlow
  - Prototype used to show the process
  - More interviews helped refine the process
- Deployment – execute the process
  - Monitor & analyze user experience, identify rough spots
  - Found operational & process issues
  - Led to process refinement & next round ...



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# Lessons Learned

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- **Transition – manual process → automated process**
  - Not enough detail to implement (usually)
  - Much work to fill in the blanks
  - Graphical modeling is straightforward
- **Deploy Process via ‘execution’ tool**
  - Invaluable for monitoring the process in action
  - Good platform for meaningful user feedback
  - Process modifications easier to implement and test
    - Process improvement & optimization greatly enabled
- **Once a ‘good’ process was fielded**
  - Productivity and quality gains were realized
  - Other groups wanted in
    - Reuse existing proven process
    - Customize the proven process – no more wheel reinvention
  - Process resistance diluted



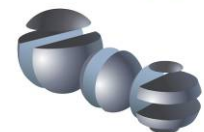


# Results

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- **We met the Requirements**
  - BPSCM is compliant with the new SLSD CM plan
  - CCBs using BPSCM are more efficient
    - 25% less admin support required
    - CCB artifacts, milestones and communications more accessible
- **We transcended the Requirements**
  - CCB participation rates increased
  - Quality of CCB interactions increased
    - Attendees are much better prepared
    - Reminders & automatic notifications streamlined operations
    - Management visibility greatly enhanced
- **Current Deployment**
  - Used on over 25 SLSD Boards
  - ~800 users
- **Truly Unusual**
  - Overheard, unsolicited – “The CM tool is awesome”

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# Tietronix Process Projects

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- **Tie Flow tool to automate processes**
  - Built and evolved under NASA SBIRs
  - Process engine for BPSCM and projects detailed below
- **BCD – Budget Change Directive**
  - Implements budget change process between projects
  - Used by SLSD at JSC and other sites
- **SDA – Software Developer's Assistant**
  - Reduce NASA software lifecycle process overhead
  - Assure compliance with best practices and process requirements
  - SBIR Phase I- Phase III
  - Deployments planned for JSC Mission Ops Directorate in early 2008 and later for JSC Engineering Directorate



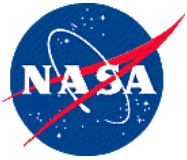


# Observation & Trends

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- **NASA Process Automation projects we have witnessed**
  - Have ultimately been successful & well received
  - Continue to gain traction & grow
  - Are similar to commercial Business Process Management (BPM) efforts
- **Commercial Business Process Management - BPM**
  - Tools, infrastructure & services for process centric applications
  - Mainstream use occurring now – demand for apps accelerating
    - Growth rates expected at 17%-36%/yr. over next 5 yrs. \$11.6B by 2011 – Forrester
  - Productivity gains of 15%-150% in human centric processes reported
- **BPM definition evolving**
  - From the tools/technology to build, model, deploy & maintain processes
  - To a general management discipline focused on:
    - Agile and more productive operations
    - Procedural compliance typically tied to best or mandated practices
    - Continuously improved process





# Mainstream BPM Use

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- **Nike – Claims Resolution**
  - Claims resolution cycle time reduced. 180 days to 1-14 days
  - Six month payback
- **AIG – Loan Processing**
  - Underwriters can locate all related documents instantly
  - Max productivity from 4.5-5 loans per day to 7-9
- **Nissan Motor Acceptance Corp. – Contract Management**
  - Cites dramatic improvements in productivity & customer service
- **FedEx and ProFlowers – Supply Chain**
  - Automates order processing linking growers and FedEx to enable deliveries to most US cities within 24 hours.
- **Cemex – Logistics**
  - Dynamic Synchronization of Operations
  - Delivery windows reduced from 3 hours – 20 minutes
  - 35% reduction in delivery trucks – reduced expense
  - Increased revenue for providing better service





# Final Thoughts

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- **BPSCM Success – A repeatable process?**
  - Management interest and sponsorship to improve
  - A new CM Plan where **COMPLIANCE IS MANDATORY**
  - Existing documented manual process
  - **Patience to define process logic thoroughly enough to ‘code’**
  - Technology to implement, monitor & modify the process
  - Understanding that now it is easy & expected to modify and improve the process regularly
- **NASA Candidate Project profile**
  - Human collaboration and decision making
  - Document Processing
  - Compliance to best practice based procedures important
  - ‘Process Improvement is valuable’ mentality
  - Supportive BPM type technology should be planned
- **Many Good Fits**





# Questions?

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*For more information*

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